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CURRENT LITERATURE IN AGRICULTURAL ENGINEERING

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ENGINEERING

WASHINGTON, D. C.

Vol. 4, No. 12.

July, 1935.

Agriculture.

Agricultural adjustment in 1934. Report of administration of the agricultural adjustment act, February 15, 1934 to December 31, 1934. Washington. U.S. Government Printing Office, 1935. 456p.

Not sand, but silt: no woe in dust storms. By P.A. Lovewell. Printers' Ink. v. 171, no.2. April 11, 1935. p. 17-20. Middle western farm outlook is hugely promising, despite dust storms. Published reports about dust storms were not exaggerated to any serious extent. But there has been wide misunderstanding as to effect on farmer.

Roosevelt defends agriculture. Southern Planter. v.96, no.6. June, 1933. p. 4, 11.

22,470 new farms in California. Pacific Rural Press. v.129, no.20. May 18, 1935. p.516.

Too much hay on the ground: A farm picture. By Henry J. Haskell. Printers' Ink. v.170, no.7. February 14, 1935. p.44-45, 48-49.

Air Conditioning.

80 homes in low price field are air conditioned. Domestic Engineering. v. 45, no. 6. June, 1935. p.60-61.

Large and small homes are cooled with well water. By J. Clifford Lewis. Domestic Engineering. v.145, no. 6. June, 1935. p.62-64. How air conditioning and electric water supply equipment were adapted to requirements of existing building are described in this article.

Profitable air conditioning. By R. B. Regan. Power Plant Engineering. v.39, no.7. July, 1935. p. 407-408. Types of systems and units to be considered; effects of design features on economy; climatic and occupational conditions are factors in cost analysis.

Alcohol.

Alcohol-gas bill law in Nebraska. Western Irrigation. v.17, no.9. June, 1935. p.4. Gives tax advantage in proportion to amount of alcohol in blended motor vehicle fuel. Measure permits blending of from 5 to 20 per cent alcohol in gasoline, and under Nebraska's five cent gasoline tax would give advantage of two cents for every ten gallons of gasoline containing 10 per cent alcohol.

Alcohol. (Cont'd)

Alcohol motor fuel. Western Irrigation. v.17, no.4. January, 1935. p.9. Most valuable and important outlet for our surplus and waste products, other than fiber, will be in manufacture of industrial alcohol to use as blend with gasoline in proportion of 10-20% alcohol and balance low-grade gasoline. Evidence that alcohol-gasoline blend is satisfactory and economical motor fuel twenty-one nations are now using this blend, ten of them have passed laws requiring use of alcohol in motor fuel.

Canadians find alcohol-blend scheme costly and impractical. Sugar News. v. 15, no. 10. October, 1934. p. 587. Use of alcohol in motor fuel, even in small proportions, would result in increase in cost of fuel amounting to from 3¢ to 3.6¢ a gallon, the National Research Council of Canada says in a report of a study made of blended motor fuels received by American Petroleum Industries Committee. Report of Council states that motor fuel made by hydro-generation of coal would be considerably cheaper than blended fuel made from wheat costing 60¢ a bushel.

Motor alcohol experiments. Sugar News. v.15, no.10. October 1934. p.586-587. Fuel value of absolute alcohol, from miles per gallon point of view, is about three-fourths that of petrol.

Building Construction.

Bricks made automatically by one-man machine. Popular Mechanics. v.63, no.4. April, 1935. p.523. Brick is semi-hollow and has water-repelling surface. Two-horsepower motor drives machine.

Prefabrication. Building Material Merchandising Digest. v.4, no.6. June, 1935. p. 14-15. Prefabricated all-wood house offers such possibilities of low cost and satisfactory quality that it may be important means of solving nation's housing dilemma.

Principles of reinforced concrete construction. By F.E. Turneaure and E.R. Maurer. 4th edition. N.Y., John Wiley & sons, Inc., 1935. 461p.

Real estate and building reviving. By Norman Trumbull Carruthers. Magazine of Wall Street. v.56, no.4. June 8, 1935. p. 178-180, 210-211. Increased mortgage money available, and expanding demand for new homes spurs private construction and brightens outlook for companies associated with building.

Cotton and Cotton Ginning.

Cotton quality elements involved in U.S. Cotton ginning investigations. By F.L. Gordes. Cotton Ginners' Journal. v.6, no.9. June, 1935. p.3-4, 10, 12, 20, 22-23, 26. Points out some outstanding results that have been obtained from cotton quality analyses of samples involved in studies made to date.

Cotton and Cotton Ginning. (Cont'd)

New cotton uses. By Ralph V. Grayson. Manufacturers Record. v.104, no.4. April, 1935. p.32, 64. Cotton insulation investigations that offer new market for producers, and new and improved materials for consumers.

Dams.

Engineering for masonry dams. By William Pitcher Croager. 2d edition. N.Y., John Wiley & sons, Inc., 1929. 294p.

Model of Bonneville dam aids study of river. Popular Mechanics. v.63, no.4. April, 1935. p.539. Model enables engineers to study river currents that probably will be created by construction; daily measurements are made in testing model under all conditions.

Diesel Engines.

Diesel engine design. By Harold F. Shophord. N.Y., John Wiley & sons, Inc., 1935. 227p.

Electric Service, Rural.

Arkansas power rural service plan. Electrical World. v.105, no. 11. June 22, 1935. p.64. About 3,500 miles of distribution line will be required to bring electric service to some 15,000 farm houses in 55 counties served by Arkansas Power & Light Company. Present program provides for line building for a minimum of three customers per mile. Since system investment of the power company will run from \$300 to \$500 for each rural customer, average bill of \$2. or \$3. per month will not provide adequate return on cost to serve. Therefore it is suggested that each new customer figure on investment of at least \$100. Down payment will be ten per cent and with usual bill deposit of \$5. can usually be paid for by customer with labor in building lines. Remaining \$85. is to be spread in installment payments, preferably over two years, not longer than five years.

Build good rural lines: Editorial. Electrical World. v.105, no.11. June 22, 1935. p.40-41. Saving in first cost may be more than offset in maintenance and depreciation cost. Rural lines should be as good as if not better than urban overhead lines in construction and in service they give. Washington wishes quick action to put men to work and utilities should take initiative in preparing local and regional plans and projects that can be approved and put into operation under their direction. They know the rural business and should continue to be major agencies to establish larger measure of rural electrification.

Design of rural lines. By Howard P. Seelye. Electric Journal. v.32, no.7. July, 1935. p.266-269. Prime essential in rural electrification is low-cost line. However, adopting too cheap construction is false economy, for two reasons: continuity of service is becoming

REPORT OF THE BOARD OF DIRECTORS

The Board of Directors of the Company has the honor to acknowledge the receipt of the report of the Management and the report of the Audit Committee for the year ended December 31, 1967.

The Board has reviewed the report of the Management and the report of the Audit Committee and is satisfied with the results of their work.

The Board has also reviewed the report of the Management on the Company's financial position and the results of its operations for the year ended December 31, 1967.

The Board has approved the report of the Management and the report of the Audit Committee for the year ended December 31, 1967.

The Board has also reviewed the report of the Management on the Company's financial position and the results of its operations for the year ended December 31, 1967. The Board is satisfied with the results of the Company's operations and the financial position of the Company.

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almost as important to farm with its many motorized devices as it is to industry, and farm lines are less accessible to maintenance men at times when maintenance and repair are most necessary than are urban lines.

Electricity in the Home.

Electric kitchen - a load builder. By P.B. Zimmerman. Electrical World. v.105, no.12. June 8, 1935. p.51.

Home electrification urged as recovery measure. Electrical World. v.105, no.11. June 22, 1935. p.43. Electrifying American homes in full was proposed last week as "direct method for completing national recovery", in statement issued by J.R. Bohnen, secretary of the American Washing Machine Manufacturers' Association. "Appliance installation to reasonable degree of saturation would mean expenditure, at rural values, of \$10,000,000,000, would spread re-employment through many manufacturing and selling lines, and would be no strain on retail financing facilities already functioning efficiently in our allied industries."

Electricity on the Farm.

Electricity for farms. By Thomas A. Loadley. Nebraska Farmer. v.77, no.13. June 22, 1935. p.17. Will the rural market justify huge government power plants? Farmers need and want electric power, but their power operations do not permit average consumption of large volume.

Electrify rural America now. Domestic Commerce. v.15, no.18. June 30, 1935. p.315. At present there are approximately 700,000 farms receiving central station electric service out of total of 6,300,000 farms. In Mississippi Valley only 10 per cent of farms are electrified. In United States as a whole, it is estimated that in 1930 there were 12,500,000 rural homes, both farm and non-farm, of which 8,500,000 had no high line service.

Electrify the farm. By Morris L. Cooke. Today. v.4, no.7. June 8, 1935. p.6-7, 22. With only 800,000 electrified farms, country faces big urgent task of rural modernization. R.E.A. will start the work; farmers and public and private power agencies must carry it on.

Farm electricity. Maryland Farmer. v.19, no.6. June, 1935. p.14. State survey shows rural residents increasing use of central station power and lighting.

Farm set works on 32 volts D.C. Popular Mechanics. v.63, no.4. April, 1935. p.582-583, 116A.

Morris L. Cooke, director of rural electrification. Electrical World. v.105, no.11. June 22, 1935. p.70, 72. Visions extension of rural electrification beyond anything yet generally conceived. He is counting not only on electricity making agricultural operations more profitable,

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Electricity on the Farm. (Cont'd)

not only on its recreating farm life and culture, but also on its kindling huge demand for both durable producer and durable consumer goods alike. Melvin O. Swanson has been appointed chief engineer.

\$100,000,000 to spend on rural electrification. By Morris L. Cooke. Southern Planter. v.96, no.6. June, 1935. p.5, 19. General policy of the Administration is to accomplish program on area rather than piecemeal basis, and consequently take advantage of savings in cost that will naturally ensue. Therefore larger percentage of farms in a given district who are willing to connect and take service, the better the chances will be.

Rural electrification. By Hudson W. Reed. Electrical World. v.105, no.12. June 8, 1935. p.58-60. Economic versus social values. Limitations are many. Illustrative costs. Cooperate with R.E.A. in worth-while projects. False conception on service and construction.

Rural electrification: Editorial. Ohio Farmer. v.175, no.11. May 25, 1935. p.4. First thing this new alphabetical agency should do is to pick up study of rural electrification problems as carried on at many state colleges and experiment stations. Research is foundation of any development program, and we cannot let search for facts about rural electrification die for want of nourishment. We may even decide before we get through that Diesel engines can be adapted for individual plants cheaper than running expensive power lines through sparsely settled country side.

Rural electrification sheet. Electrical World. v.105, no. 11. June 22, 1935. p.30. Based on data given in memo. by J.P. Schoenzer, National Power Survey.

Rural electricity. Maryland Farmer. v.19, no.6. June, 1935. p.5. Maryland ready to take advantage of Federal aid to extend light and power to farmers.

Engineering.

Engineering foreign countries. Engineering News-Record. v.115, no.1. July 4, 1935. p.19. Accounts taken from foreign-language periodicals of important activities in engineering research, design and construction being carried on beyond the United States. Concrete flume of novel design.

Erosion Control.

At last - a soil erosion program. New Republic. v.83, no.1069. May 29, 1935. p.68-70. Of all nations of the world either ancient or modern, ours has probably been greatest despoiler of natural resources. Most conservative estimates, such as leave out of consideration flood damage and costly problem of silting of reservoirs and streams, losses incurred through creation of impoverished and stranded farm populations,

Erosion Control.

(Cont'd)

and possible future value of lands already destroyed or impoverished, indicate that annual loss from erosion amounts to at least \$400,000,000.

Establishment of soil conservation service. : Editorial. Experiment Station Record. U.S. Department of Agriculture. v.72, no.6. June, 1935. p.737-738. New organization is to operate as separate unit of Department of Agriculture, under direction of Secretary, and control work. Consolidation thereby effected embraces first of all activities dealing with prevention and control of erosion heretofore conducted under Interior Department. It will also include soil erosion investigations and regional experiment stations previously conducted by Bureau of Chemistry and Soils, and Agricultural Engineering in cooperation with respective state experiment stations, erosion control nurseries, and related activities of Bureau of Plant Industry, and Civilian Conservation Corps erosion control work, which has been under immediate supervision of Forest Service.

Recommendations for the control and reclamation of gullies. By I.C. Ayres. 1935. 71p. Iowa Engineering experiment station. Bulletin no.121.

Soil erosion in Missouri. By L.D. Bauer. 1935. 66p. Missouri. Agricultural experiment station. Bulletin no.349.

Windbreaking paper helps fight wind erosion. Market Growers Journal. v.56, no.12. June 15, 1935. p.264. Made of tough though light material reinforced by sisal fiber so as to make it very difficult to tear. Rolls of it are laid down, providing series of teeth against which wind already slowed up by trees, has its scouring abilities still further checked.

Wisconsin acts to check soil erosion. By Edward Lyons. Wisconsin Agriculturist and Farmer. v.62, no.12. June 8, 1935. p.3. Principal phases of this program are discussed.

Farm Buildings and Equipment.

Braced rafter barn. Hoard's Dairyman. v.80, no.5. March 10, 1935. p.118. In addition to lumber requirements, gives list of other needed materials.

Building plans for dairy barns. Hoard's Dairyman. v.80, no.5. March 10, 1935. p.109. Suggestions from blue prints supplied by the Wisconsin College of Agriculture.

Bull pen construction. Hoard's Dairyman. v.80, no.5. March 10, 1935. p.122.

Farm buildings are needed. Wisconsin Agriculturist and Farmer. v.62, no.11. May 25, 1935. p.1.

How good dairy barns are built. Hoard's Dairyman. v.80, no.5. March 10, 1935. p.108, 125. Some of the essentials to be considered in planning the building of a new barn or the remodeling of an old barn.

Farm Buildings and Equipment. (Cont'd)

Most popular barn in Wisconsin. Wisconsin Agriculturist and Farmer. v.62, no.11. May 25, 1935. p.5.

Remodeling an old barn. By John Barton. Hoard's Dairyman. v.80, no.5. March 10, 1935. p.110.

Farm Machinery and Equipment.

Agriculture and the automotive development. By Charles Deere Winan. Farm Implement News. v.56, no.14. July 4, 1935. p.14-15, 18-19. Table gives effect of farm mechanization on employment in other industries.

Brain for brawn with new machines. By J. Brownlee Davidson. The Furrow. v.40, no. May-June, 1935. p.4, 11. Windrow pick-up hay beler. Ensilage harvester. New corn picker. Combine cuts costs.

New hay crop suggests need for better tools. By E.T. Leavitt. Northwest Farm Equipment Journal. v.49, no.6. June, 1935. p.23.

Production control machinery is crude mechanism for economic democracy. By Henry A. Wallace. Maryland Farmer. v.19, no.5. May, 1935. p. 14.

Profits in binder repairs. - Why pass them up? Implement and Tractor. v.50, no.12. June 15, 1935. p.14, 19. Combination of unusual harvesting conditions will prove severe test to equipment of highest average age in years.

Flood Control.

Southwest rivers do damage as heavy rains cause floods. Engineering News-Record. v.114, no.26. June 27, 1935. p.925.

Floors.

Tests indicate design methods for earthquake-proof timber floors. By Norman B. Green, A.C. Horner and Theodore C. Combs. Engineering-News-Record. v.114, no.25. June 20, 1935. p.871-875. Summary of recent full-size and quarter-scale model tests of wood floors considered as diaphragms in masonry wall buildings.

Fuels.

Gasoline mileage and maximum power are increased by volatile fuels. National Petroleum News. v.27, no.19. May 8, 1935. p.24-A - 24-C, 72. Compiled from notes taken on preliminary report made at Fourteenth Annual Convention of National Gasoline Association of America by Dr. G.G. Brown, on research project being conducted under his direction at University of Michigan. Dr. Brown indicated that, though many of his findings had not been completely checked for their mathematical accuracy, general conclusions were substantially correct.

Heating.

Few Arkansas rural homes have central heat. Heating and Ventilating. v.32, no.6. June, 1935. p.27. Out of 20,365 homes surveyed in rural Arkansas only 35, or 0.16% had furnace heat, according to survey made by Prof. Deane G. Carter.

Small pipe sizes, forced circulation. Domestic Engineering. v.145, no.6. June, 1935. p.54-56, 82. How to determine the radiation, the size of circulating device, and other important factors in hot water heating.

Houses.

America's little house. Architectural Forum. v.62, no.2. February 1935. p.173. America's little house was constructed as national demonstration of type of housing advocated by Better Homes in America.

Federal housing in Arkansas. Arkansas Farmer. v.38, no.1. June 15, 1935. p.1.

First Federal housing is fireproof construction. Engineering News-Record. v.115, no.1. July 4, 1935. p.7-11. Tech-wood slum-clearance project in Atlanta, first to be put under construction in the all-federal program, includes 22 buildings with concrete frame and floors, and tile and brick walls.

Here's the home you've wanted. By J.F. Carter. Southern Agriculturist. v.65, no.5. May, 1935. p.12.

Homestead terms. Architectural Forum. v.62, no.2. February, 1935. p.181. Amortization of their cost in 30 years, 3 per cent interest.

Minnesota farm home building program. By H.B. White. Northwest Farmer. v.4, no.4. June, 1935. p.15. Schedule suggested: 1. Comfortable house having sink with running water, and drain. 2. Comfortable barn which, for dairy animals, should not allow water to freeze in coldest weather. 3. Poultry house that does not allow hens combs to freeze. 4. Storage where crops may be kept on farm until price at least equals cost of production.

National Housing Bureau proposed. Canadian Engineer. v.68, no.15. April 9, 1935. p.17. Operating under Minister of National Health, was recommended to the Ganong Housing Committee in Ottawa last Tuesday, by a committee of National Construction Council. This Bureau would authorize rehabilitation loans for single houses, apartment houses, and farm buildings, but not to include slums.

Planning the house interior. Architectural Record. v.77, no.5. May, 1935. p.312-313. Graphic method for determining efficiency of dwelling plans.

Hydraulics.

Hydraulics of rapid sand filters. By G. Gale Dixon. Water Works and Sewerage. v.82, no.4. April, 1935. p.103-107. Some references, comments and examples.

Text book of applied hydraulics. By Herbert Addison. N. Y., John Wiley & sons, Inc., 1934. 409p.

Insect Control.

Electric moth exterminator destroys pests by gassing. Popular Mechanics. v.63, no.4. April, 1935. p.514. Consisting of electrical unit with controlled heating element and metal container of liquid chemical.

Electrical traps. By G.W. Olliver. Rural Electrification and Electro-Farming. v.10, no.119. April, 1935. p.365-366. Some interesting notes on electrical traps as protection against insects in orchards. Whole problem is one which needs a great deal of research. There is, for example, curious and unexpected point if too many lamps are used; insects will often neglect the lamps, and settle on fruit which is lit up by lamp, whole orchard and trees being bright with light, and number of lights defeating very object for which they are installed, and attracting insects for whole neighborhood. For this reason, also, frosted lamps should never be used, and wire cage over lamp should be such as to leave them absolutely unshaded.

Insulation.

Farm building insulation. Hoard's Dairyman. v.90, no.5. March 10, 1935. p.115.

Poultry house insulation and ventilation. By H.L. Richardson. 1935. 16p. Maine. College of Agriculture. Extension service. Bulletin no.216.

Irrigation.

Construction of irrigation wells in Colorado. By W.E. Code. 1935. 43p. Colorado. Agricultural experiment station. Bulletin no.415.

Effective portable spray irrigation layout. By F.E. Staebner. 1935. 6p. Mimeographed. U.S. Department of Agriculture. Bureau of agricultural engineering.

Growing under irrigation in the Northwest. By J.W. Hazz. Market Growers Journal. v.56, no.12. June 15, 1935. p.260.

Irrigation and alkali. By H.F. Kenyon. California Cultivator. v.82, no. 8. April 13, 1935. p.216. Few of fundamentals of good irrigation practice.

Irrigation may save the day, - but have you a supply of water? By H.D. Brown. Ohio Farmer. v.175, no.11. May 25, 1935. p.3, 23. Type of pump and power. Overhead irrigation. Surface irrigation. Under-ground irrigation.

Irrigation. (Cont'd)

Irrigation objectives. By O.W. Israelson. Utah Farmer. v.55, no.21. June 10, 1935. p.7. IV. Amount of water at each irrigation.

Parshall lists ways of saving irrigation water. Western Irrigation. v.17, no.9. June, 1935. p.12.

Portable overhead irrigation. By C.B. Hutchinson. Western Irrigation. v.17, no.5. February, 1935. p.4. From new facts for California farms. Advantages of new methods.

Rate of planting corn under irrigated conditions. By Warren H. Leonard and D.W. Robertson. 1935. 11p. Colorado. Agricultural experiment station. Bulletin no.417.

Refinancing water users. By H.J. Lawson. Arizona Producer. v.14, no.7. June 15, 1935. p.10. R.F.C. makes commitments provided bondholders accept reasonable terms.

Soep hose watered spuds. Capper's Farmer. v.46, no.7. July, 1935. p.12. Total cost of irrigating materials, including second hand pump and fire hose was \$65. System conserves moisture, and is especially adapted to uneven land.

Studies on the critical period for applying irrigation water to wheat. By D.W. Robertson and others. 1934. 43p. Colorado Agricultural experiment station. Technical bulletin no.11.

Land.

Will the land hold out? Editorial. Capper's Farmer. v.46, no.7. July, 1935. p.1. Farm land is being destroyed at rate of 100,000 acres a year. Already 50 million acres have been ruined, and another are of equal size is in almost as bad condition. From additional 125,000 acres, most of it still in cultivation, nearly all of fertile top soil has been washed or blown away. Assuredly productive capacity of land now in cultivation is potentially large enough to provide sufficient food for our present population. And it can be expanded by know methods to take care of increases for indefinite number of years. But with normal purchasing power and normal consurption, statisticians have shown that surpluses of which we have heard so much last few years would not have been depressing. Drouth and acreage reduction have pared supply of many staples below normal carry-over and customary margin of safety. While we can produce plenty of food for present needs and those of immediate future, time will come inevitably, with continuation of our past wasteful policy, when we cannot do so.

Lubrication.

Performance tests of lubricating oils in automobile engines. By A.A. Everett and F.C. Stewart. 1935. 52p. Pennsylvania. Engineering experiment station. Bulletin no.44.

Lubrication. (Cont'd)

Search for perfect oil. Popular Mechanics. v.63, no.4. April, 1935.
p.498-501.

Machines.

Design of machine elements. By Virgil Moring Faires. N.Y., Macmillan
Company. 1934. 468p.

Miscellaneous.

Electrically heated cloth. Popular Mechanics. v.63, no.4. April,
1935. p.503. Copper wire is inter-spun with cotton, silk, wool or
rayon into threads which can be woven or knitted without special
machinery. Fine copper wire is lacquered before spinning and fabrics
containing wire do not stretch or shrink.

Five place table of natural trigonometric functions to hundredths of a
degree. Compiled by Amelia DeLolla. N.Y., John Wiley & sons, Inc.,
1934

Study of the functions and activities of the United States civil service
commission. By Mildred Ives and Edwin Matzen. 1935. 21p. mimeo-
graphed. U.S. Department of agriculture. Extension service circular
no.215.

Paints and Painting.

Pointers on painting. Hoard's Dairyman. v.80, no.5. March 10, 1935.
p.113.

Poultry Houses and Equipment.

Housing, labor-saving equipment, and management procedures for layers.
By D.C. Kennard and V.D. Chamberlin. Bimonthly Bulletin, Ohio Agri-
cultural Experiment Station. v.20, no.174. May-June, 1935. p.108-
112. 40 x 60 foot room equipped for layers. Ventilation. Avoid
too much window space. Labor-saving equipment. Advantages of wide
two-floor laying houses.

Portable brooder house. By C.W. Carrick and I.D. Mayer, 1935. 8p.
Indiana. Purdue University. Extension bulletin no.148.

Summer shelter for pullets. By C.W. Carrick and I.D. Mayer. 1935. 4p.
Indiana. Purdue University. Leaflet no.196.

Power.

Bay of Fundy's record tides to be harnessed by five dams. Science News
Letter. v.27, no.738. June 1, 1935. p.347-348. Water, double
area of Manhattan Island, 40 square miles, to be stored in huge project
to get power from sea.

Power. (Cont'd)

Hydro-electric power output increase in N.S. Canadian Engineer. v.68, no.20. May 14, 1935. p.15-16.

Public Works.

Progress at Bonneville. Engineering News-Record. v.115, no.1. July 4, 1935. p.16-18. Plans for passing streamflow of 700,000 sec.-ft. Earth cofferdams at power house may be partly removed and replaced. Temporary lock gate. Fishway to cost \$3,200,000.

Status of P.W.A. projects. Electrical World. v.105, no.11. June 22, 1935. p.35. Municipal requests for electric projects near \$600,000,000, but \$40,000,000 allotted. Little for actual new plant construction.

Pumps.

Operation and regulation characteristics of centrifugal pumps. By G. Hermann. Power Plant Engineering. v.39, no.7. July, 1935. p.393-395. Why centrifugal pumps have different characteristics. Adjustable blade propeller pumps have advantages for low head work, recent pump of this type alternates as pump and turbine.

Reforestation.

Roosevelt's tree army: L. New Republic. v.83, no. 1069. May 29, 1935. p.64-66. Bare replacement value of projects completed by C.C.C. is put at \$335,000,000. To cite figures, up to April 1, boys had spent 15,000,000 man-days, fighting forest fires, built 50,000 miles of forest roads and trails, strung 25,000 miles of telephone wire, constructed 800,000 erosion dams, excavated 3,000 wells, planted 236,000 acres of tree seedlings, and dug 1,200,000 yards of mosquito-control ditching.

Refrigeration.

Cooling of eggs. By E. M. Funk. 1935. 15p. Missouri. Agricultural experiment station. Bulletin no.350.

Household refrigerator specifications. Electric Refrigeration News. v.14, no.12. March 20, 1935. p. 8, 10, 12-13, 15, 17.

Research.

Materials research and standardization increasingly active. Engineering News-Record. v.115, no.1. July 4, 1935. p.20-23. Detroit meeting of A.S.T.M. reflects marked revival of effort in field of materials, and produces many advances in specifications and important research results.

Whither industrial research? By E.R. Weidlein. Industrial and Engineering Chemistry. v.27, no.6. June, 1935. p.607-610.

Sewage and Sewage Disposal.

Getting complete farm plumbing. By Deane G. Carter. Farm and Ranch. v.54, no.10. May 15, 1935. p.19. Drawing shows construction view of typical septic tank.

Sewage and sewage treatment. By Harold E. Babbitt. 4th edition. N.Y., John Wiley & sons, Inc., 1932. 596p.

Silt.

To study Boulder dam silt problems. California Cultivator. v.82, no.8. April 13, 1935. p.220. Soil erosion service announced plans for maintaining constant check on amount of silt and other erosional debris deposited in huge water storage plan by Colorado river and its tributaries. Soil erosion service, in cooperation with bureau of reclamation and coast and geodetic survey, will begin work of mapping 230 square miles to be inundated behind Boulder dam. When completed, this map showing original contours of reservoir bottom will form basis for future comparative studies to determine changes in topography of lake floor due to deposits of sediment.

Siphons.

Principles of siphon design for Colorado river aqueduct. By D.B. Gurnensky. Engineering News-Record. v.114, no.26. June 27, 1935. p.899-903. Fundamental structural and economic principles and practical considerations governing design of 146 inverted siphons on 242-mile aqueduct for additional water supply for metropolitan Los Angeles.

Soil Moisture.

Little effect of soil classes on optimum moisture. By B.G. Zimmerman. Engineering News-Record. v.114, no.25. June 20, 1935. p.875-877. Four natural and four mixed soils compared as to optimum moisture for equal pressure. Hydrometer analyses of soils compared.

Soils.

Drainage and irrigation, soil, economic and social conditions, Delta area, Utah. Division 2. Soil conditions. By D.S. Jennings and J.D. Peterson. 1935. 67p. Utah. Agricultural experiment station. Bulletin no.256.

Soil technology in earth dam construction as employed in Back Creek dam. By C.A. Hogentogler, Jr. Public Works. v.66, no.5. May, 1935. p.28-29.

Storage Houses.

Metal grain bins for wheat. Implement and Tractor. v.50, no.12. June 15, 1935. p.10-11. Cost of metal grain bin approximates 9 to 11 cents per bushel of its capacity. Metal grain bin, properly set up,

Storage Houses. (Cont'd)

should easily last from 15 to 20 years. On such basis cost of storage on farm with metal grain bins would not exceed a cent per bushel per year, and most frequently would more likely approximate a half-cent. Metal grain bins are made of 20 and 24 gauge steel with heavy galvanized coating. Sheets of this gauge are of .037 and .025 inch thickness, respectively. This type of material has proven adequate over long period of years. Bins range in size from capacities of 500 to 2,200 bushels. Metal grain bins are equipped with steel roof of adequate pitch, side openings and roof port hole ventilator cupola at roof peak. Through this ventilating feature air is drawn from top of grain and effecting curing and conditioning while in storage is provided. Side openings consists of swinging door, pressed steel door slat and shoveling board at bottom. All bins are also equipped with heavy steel floor.

Storage of vegetables. By Clarence E. Baker and W.B. Ward. 1935. 12p. Indiana. Purdue University. Extension bulletin no.58.

Surveys.

Control surveys in Norris dam reservoir. By George D. Whitmore. Military Engineer. v.27, no.154. August, 1935. p.275-279. Field work logically divided itself into four stages: 1. Locating and setting monuments. 2. Levelling to establish third-order elevations on monuments. 3. Taping and profiling ranges, including river soundings. 4. Establishing plane coordinates on monuments.

Snow surveys as an aid to flood forecast and control. By J.E. Church. Engineering News-Record. v.114, no.25. June 20, 1935. p.879-881. Reservoir regulation in the interest of both flood control and water conservation facilitated by knowledge of snow concentration and melting rate. Information needed as to effect of warm winds in increasing runoff.

Tennessee Valley Authority.

Selling - the way out. By L.W.W. Morrow. Electrical World. v.105, no.11. June 22, 1935. p.23-26. Tennessee electric power adds 161 Kw.-Hr. to average domestic use in 1934. Follows a plan that is getting outstanding results. Costs and returns encouraging to date.

T.V.A. compromise bill offered. Electrical World. v.105, no.11. June 22, 1935. p.44. Under the provision of compromise bill the T.V.A. directors would be empowered to generate and market electrical energy "in order to avoid waste of water power" and to provide funds to assist in meeting costs of T.V.A. After July 1, 1938, no surplus power or chemicals could be sold below cost of production. Board would be directed, however, to "preserve existing distribution facilities". Board would be empowered to have outstanding at any time not more than \$50,000,000 worth of bonds, to yield not more than $3\frac{1}{2}$ per cent. All receipts and disbursements would be reported to General Accounting Office, and Comptroller-General McCarl would

Tennessee Valley Authority. (Cont'd)

settle all claims arising under the T.V.A. Act. Bill retained proviso that private companies must get Federal Power Commission approval to construct dams that affect flood control or navigation of Tennessee river.

Terracing.

Terracing also stops the winds. By W.A. Steele. Implement and Tractor. v.50, no.12. June 15, 1935. p.15, 28. Government projects, educational in nature, show way to individual farmer effort for which tool equipment is now available for use with all forms of power.

Tires.

"Fabric" inner tube lessens blowout hazard. Popular Mechanics. v.63, no.4. April, 1935. p.488. Tire consists of double tube, one inside other, and joined at base, a single vent hole connecting the two air chambers. Outside tube is similar in function and appearance to ordinary tube and fits against inside of casing, while inside tube or "lung" built of two plies of fabric, floats free without chafing.

Heavy tread on "snow" tire gives better traction. Popular Mechanics. v.63, no.4. April, 1935. p.544. Designed especially for winter use, a new tire is equipped with heavy tread that gives better traction in snow and ice. Scientific design provides easy steering, firm grip in snow and smooth riding on pavement.

Tractors.

Operating cost and upkeep of garden tractors. Market Growers Journal. v.56, no.12. June 15, 1935. p.264-265. Table gives costs of seed bed preparation per acre based on California data.

What farmers want in their tractors. Implement and Tractor. v.50, no.13. June 29, 1935. p.8-9. Fifteen thousand express opinions, two-thirds mentioning rubber tires. Two-plow row crop is size of unit preferred by most. Kerosene-distillate fuels load with gasoline showing formidable following.

Water Heating.

Hot water gas converter makes tank automatic. Popular Mechanics. v.63, no.4. April, 1935. p.501. Conversion of range boiler into automatic hot water storage tank is made easy by small gas heater about size of a thermos bottle. Unit has no coils, fin-type construction giving heating efficiency of eighty per cent. Adjustable thermostat is provided to assure extra supply of hot water when desired. Burner has automatic cutoff to guard against flame being extinguished accidentally. Gas consumption is low, maximum about six cubic feet per hour for heating five gallons of water.

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Water Supply.

- 16 -

Cycle study hints end of drought. By Frederic E. Clements. Science News Letter. v.27, no.739. June 8, 1935. p.372. Basis for anticipation (which are hardly to be dignified by the term prediction) has been laid by general studies of solar cycles and climate during past fifty years and by specific ecological ones of drought and sunspots for past twenty

Development of surface water supply. By E. L. Lium. Public Works. v.66, no.4. April, 1935. p.11-12.

Elements of water supply engineering. By Earle Lytton Waterman. N.Y., John Wiley & sons, Inc., 1934. 302p.

Wet years indicated for Pacific Coast states. By George F. McEwen. Science News Letter. v.27, no.739. June 8, 1935. p.372-373.

Water System.

Electric water system for the farm. By E.T. Swink. 1935. 8p. Virginia. Agricultural and Mechanical College. Extension Circular no.324.

Weather: .

Weather states "match" in widely separated regions. By H.H. Clayton. Science News Letter. v.27, no.739. June 8, 1935. p.373. Weather conditions in certain parts of earth closely resemble conditions occurring simultaneously in far distant regions. These conditions may be alike or they may be opposite in character.

